

LISTING OF CLAIMS:

Claims 1-21 are pending in this application. New claims 22 and 23 are added, claims 1, 2, 4-8, 10-18, 20 and 21 are amended, claims 9 and 19 are canceled without prejudice or disclaimer of subject matter recited therein. No new matter has been added.

The following listing of claims will replace all prior versions and listings, of claims in this application.

1. (Currently Amended) ~~An image processing apparatus for processing a plurality of colors of image data that form an image, comprising:~~
~~a buffer memory;~~
~~a memory controller for writing the plurality of colors of image data in said buffer memory in units of lines and in a predetermined color order, and reading out the plurality of colors image data written in said buffer memory; and~~
~~an image processor for processing the plurality of colors of image data read out by said memory controller~~

A1 ① The apparatus according to claim 22, wherein said buffer memory has a plurality of blocks which are virtually broken up into a matrix pattern, and
~~said memory controller~~ said image processor switches operation for writing the plurality of ~~colors~~ color components of image data in the blocks that belong to corresponding rows, and operation for writing the plurality of ~~colors~~ color components of image data in the blocks that belong to corresponding columns in units of lines, and reads out old image data from a region of said buffer memory in which new image data are expected to be overwritten before the new image are overwritten by the write operation.

2. ② (Currently Amended) The apparatus according to claim 1, wherein said buffer memory is virtually broken up into rows, the number of which is equal to the

number of colors, and ~~rows~~ columns, the number of which is equal to the number of colors.

○ 3. (Original) The apparatus according to claim 2, wherein the plurality of image data include R, G, and B data, and said buffer memory is virtually broken up into 3 rows x 3 columns.

4. (Currently Amended) The apparatus according to claim 1, wherein said ~~memory controller~~ image processor writes the image data in each block in turn from a head position thereof, and reads out the image data from the block in turn from the head position thereof.

5. (Currently Amended) The apparatus according to claim 1 ~~+~~ 22, wherein the plurality of image data are R, G, and B data, and said image processor generates output image data by simultaneously referring to the R, G, and B data.

A1 6. (Currently Amended) The apparatus according to claim 1 ~~+~~ 22, wherein the plurality of image data are R, G, and B data, and said image processor executes a process for converting the R, G, and B data into C, M, Y, and K data, ~~and a masking process.~~

7. (Currently Amended) The apparatus according to claim 1 ~~+~~ 22, wherein said image processor processes the plurality of ~~colors~~ color components of image data read out by from said buffer memory ~~controller~~ within a period which has the same duration as a period in which said ~~memory controller~~ image processor writes the plurality of colors of image data for one line in said buffer memory.

8. (Currently Amended) The apparatus according to claim 1 ~~+~~ 22, ~~further comprising a read sensor for reading an image in units of lines and in a predetermined color order, and wherein~~ said ~~memory controller~~ image processor writes image data which have been output from said ~~read sensor~~ image reading unit and have undergone a predetermined process in said buffer memory.

9. (Canceled)

10. (Currently Amended) The apparatus according to claim 4 22, further comprising an output unit for outputting image data processed by said image processor.

11. (Currently Amended) ~~An image processing method for processing a plurality of colors of image data that form an image, comprising:~~

~~the memory control step of writing the plurality of colors of image data in a buffer memory in units of lines and in a predetermined color order, and reading out the plurality of colors image data written in the buffer memory; and~~

~~the image processing step of processing the plurality of colors of image data read out in the memory control step~~

The method according to claim 23, wherein the buffer memory has a plurality of blocks which are virtually broken up into a matrix pattern, and

the ~~memory control~~ processing step includes the step of switching operation for writing the plurality of colors color components of image data in the blocks that belong to corresponding rows, and operation for writing the plurality of colors color components of image data in the blocks that belong to corresponding columns in units of lines, and reading out old image data from a region of the buffer memory in which new image data are expected to be overwritten before the new image data are overwritten by the write operation.

12. (Currently Amended) The method according to claim 11, wherein the buffer memory is virtually broken up into rows, the number of which is equal to the number of colors, and ~~rows~~ columns, the number of which is equal to the number of colors.

13. (Currently Amended) The method according to claim 12, wherein the plurality of image data include R, G, and B data, and said the buffer memory is virtually broken up into 3 rows x 3 columns.

14. (Currently Amended) The method according to claim 11, wherein the

~~memory control processing~~ step includes the step of writing the image data in each block in turn from a head position thereof, and reading out the image data from the block in turn from the head position thereof.

15. (Currently Amended) The method according to claim ~~11~~ 23, wherein the plurality of image data are R, G, and B data, and the ~~image~~ processing step includes the step of generating output image data by simultaneously referring to the R, G, and B data.

16. (Currently Amended) The method according to claim ~~11~~ 23, wherein the plurality of image data are R, G, and B data, and the ~~image~~ processing step includes the step of executing a process for converting the R, G, and B data into C, M, Y, and K data, ~~and a masking process.~~

A1 17. (Currently Amended) The method according to claim ~~11~~ 23, wherein the ~~image~~ processing step includes the step of processing the plurality of colors of image data read out from the buffer memory within a period which has the same duration as a period in which the plurality of colors of image data for one line are written in the buffer memory.

18. (Currently Amended) The method according to claim 11, wherein the ~~memory control processing~~ step includes the step of writing image data which have been output from ~~a read sensor~~ the image reading unit and have undergone a predetermined process in the buffer memory.

19. (Canceled)

20. (Currently Amended) The method according to claim ~~11~~ 23, further comprising the output step of outputting image data processed in the ~~image~~ processing step.

21. (Currently Amended) A memory medium that stores software for processing a plurality of colors of image data that form an image, said software including:

an image reading step of operating an image reading unit to line-sequentially read out an original and output a plurality of color components of image data in units of lines

while time-divisionally irradiating the original with the plurality of colors; and

a processing step of writing the plurality of color components of image data for one line outputted from the image reading unit into a buffer memory, after that, during an image reading period of the image reading unit for a next line, reading out the plurality of color components of the image data for the one line from the buffer memory and performing masking operation on the read image data for the one line.

~~the memory control step of writing the plurality of colors of image data in a buffer memory in units of lines and in a predetermined color order, and reading out the plurality of colors image data written in the buffer memory,~~

~~wherein the buffer memory has a plurality of blocks which are virtually broken up into a matrix pattern, and~~

~~the memory control step includes the step of switching operation for writing the plurality of colors of image data in the blocks that belong to corresponding rows, and operation for writing the plurality of colors of image data in the blocks that belong to corresponding columns in units of lines, and reading out old image data from a region of the buffer memory in which new image data are expected to be overwritten before the new image data are overwritten by the write operation.~~

22. (New) An image processing apparatus, comprising:

a light source which irradiates an original with a plurality of colors in a time-divisional manner;

an image reading unit which line-sequentially reads the original and outputs a plurality of color components of image data in units of lines while time-divisionally irradiating the original with the plurality of colors using said light source;

a buffer memory; and

an image processor which writes the plurality of color components of image data for one line outputted from said image reading unit into said buffer memory, after that, during an image reading period of said image reading unit for a next line, reads out the plurality of color components of the image data for the one line from said buffer memory and performs a masking operation on the read out image data for the one line.

23. (New) An image processing method, comprising:

an image reading step of operating an image reading unit to line-sequentially read an original and output a plurality of color components of image data in units of lines while time-divisionally irradiating the original with the plurality of colors; and

a processing step of writing the plurality of color components of image data for one line outputted from the image reading unit into a buffer memory, after that, during an image reading period of the image reading unit for a next line, reading out the plurality of color components of the image data for the one line from the buffer memory and performing a masking operation on the read image data for the one line.
